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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,551

04/16/2004

Michael Heuken

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12/19/2006

ST. ONGE STEWARD JOHNSTON & REENS, LLC

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STAMFORD, CT 06905-5619

EXAMINER

STOUFFER, KELLY M

ART UNIT

PAPER NUMBER

1762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/19/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/826,551

Applicant(s)

HEUKEN ET AL.

Examiner

Kelly Stouffer

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/30/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 1 and 3-13 in the reply filed on 20 November 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim 2 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited

3. The disclosure is objected to because of the following informalities:

- Reference numbers 5 and 20 are not described in the specification
- Reference number 14 is used to designate both a process computer in paragraph 00025 line 1 and a memory device in paragraph 00031 line 1.
- Reference number 11 is used to designate a temperature measuring apparatus in paragraph 00019 line 12, a temperature measuring sensor in paragraph 00019 line 13, and sensors in paragraph 00033 lines 4-5.

Appropriate correction of these and similar errors is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 3-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

See MPEP § 2173.05(d).

Claim 1 recites the limitation "one or more layers" in lines 1 and 2 then uses "layers" in limitations in the remainder of the claim. It is unclear whether the applicant is claiming one or more layers or layers.

Claim 1 recites the limitation "the set values for the process parameters" in lines 7 and 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the actual values" in lines 12 and 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the individualized data for the associated substrate" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the same formulation" in line 20. There is insufficient antecedent basis for this limitation in the claim.

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Claim 3 recites the limitation "the set values". There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the actual values". There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the actual values". There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the formulation". There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 6, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 7 recites the limitation "the temporal profiles of the actual values". There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the set values". There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the regulators". There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 8, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 9 recites the limitations "the valve positions of the valves," "the temperature of liquid metalorganic sources," and "the rotational speed and temperature

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of a substrate holder". There is insufficient antecedent basis for this limitation in the claim. Further, it is unclear whether these process parameters in claims 9 and 1 are claimed in the alternative, or if the claim includes all of these process parameters being modified together.

It is unclear whether these process parameters in claims 10 and 1 are claimed in the alternative, or if the claim includes all of these process parameters being modified together.

Claim 11 recites the limitation "the sequence of the set values". There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the plausibility check". There is insufficient antecedent basis for this limitation in the claim, as claim 12 depends from claim 1 and there is not antecedent basis for a plausibility check in claim 1.

Claim 12 recites the limitation "the control device". There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 13, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claims 4-13 recite the limitation "Method or apparatus according to claim 1." As claim 1 is a method claim, it is unclear what claims 4-13 are referring to by using the limitation "apparatus".

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

THM  
12/14/06 5. Claims 1, 3, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent number 5871805 to Lemelson.

Regarding claim 1, Lemelson discloses a method for coating at least one substrate in a CVD chamber using metalorganic reaction gases (column 1 et seq.) where the reaction gases are introduced into the CVD chamber with mass flow control (column 5 lines 48-65 and Figure 1) where a layer is deposited on a substrate with a temperature controlled substrate holder (columns 1 and 2 lines 25-15). Values for process parameters are adjusted during the coating cycle in accordance with a predetermined formulation and the process parameters for each substrate are determined in an individualistic manner during the coating cycle and stored (columns 4 and 5 lines 52-47). Layer properties are determined after each coating cycle and are associated with the process parameters and correlated together in columns 7 and 8 lines 46-43.

Regarding claims 3 and 4, Lemelson uses moderately suitable conditions, which may be considered mean values, and then deviations are generated as broadly claimed by the applicant, in column 8 lines 5-15.

Regarding claim 5 the model contains corrected functions applied to actual values from correlation functions in columns 7 and 8 lines 46-43.

Regarding claim 6, Lemelson includes layer properties and measures them in situ, ending the coating step when the desired property is achieved in column 7 lines 45-65 and measuring techniques are in column 6 et seq.

Regarding claim 7, since the correlation values are generated from a correlation function in Lemelson, one of ordinary skill in the art would recognize that this may also generate a graph (columns 7 and 8 lines 46-43).

Regarding claim 8, process parameters are provided by mass flow regulators as in column 12 lines 66-67.

Regarding claim 9, the positions of valves are adjusted as a process parameter in column 12 lines 66-67 and other process parameters are described in columns 3 and 4 lines 42-1.

Regarding claim 10, process parameters are correlated with layer properties using mathematical functions in columns 7 and 8 lines 46-43.

Regarding claims 11 and 12, Lemelson discloses what may be considered a process check as described in the claims in columns 9 and 10 lines 62-19.

Regarding claim 13, Lemelson uses reactor temperature, or ambient air temperature in his formulations (column 7 lines 46-52) and cites atmospheric conditions as affecting the coating process in column 3 lines 64-67.



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**Conclusion**


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rosenthal et al. (US 6161054) and DeBolt et al. (US 4358473) show similar methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly Stouffer whose telephone number is (571) 272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Stouffer  
Examiner  
Art Unit 1762

  
TIMOTHY MEES  
SUPERVISOR EXAMINER

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